

taken into account when the question of psychosurgery arises in chronic psychiatric disorders.

SUMMARY

A case of chronic ulcerative colitis in a catatonic schizophrenic is presented. Both conditions cleared up after prefrontal leukotomy. In the discussion of the mechanisms of chronic ulcerative colitis the belief is stressed that: (a) it is due to emotional stress which may also lead to psychotic manifestations; (b) in the presence of local somatic changes in the intestine, the picture of chronic ulcerative colitis may develop.

Our thanks are due to Dr. Stuart Schultz, Medical Superintendent, Brandon Hospital for Mental Diseases, for permission to publish this case.

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PRIMARY TUMOURS OF RIB

In a Hunterian Lecture, 50 personal and some further cases of rib tumours are discussed. Chondromas and chondrosarcomas are commonest and originate in the centre of the bone, expanding it. They are usually of long standing and are seen when pain develops, usually in young adults. Local recurrence after excision does not necessarily indicate malignant change. Drastic surgical removal is justifiable unless metastases are obviously present.

The lesions that mimic cartilaginous tumours—fibrous dysplasia, lipoid granuloma, myeloma, osteoclastoma and chronic inflammation—are differentiated. Secondary tumours, especially endothelioma of the pleura, are sometimes difficult, or metastases from an undiagnosed primary in the kidney, adrenal, bronchus or thyroid may occur. Radiographs are necessary but their interpretation should be viewed with suspicion.—N. R. Barrett: *Brit. J. Surg.*, 43: 113, 1955.

Special Article

TEACHING OF PREVENTIVE MEDICINE IN CANADA

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RESOLUTION ON PUBLIC HEALTH TEACHING IN CANADA¹

"WITHIN RECENT YEARS the practice of medicine has changed. Old problems have been replaced by others, as yet, unsolved. No longer does the doctor contend unavailingly with numbers of communicable diseases. Rather, he is faced with complex problems of an aging population, accidents and industrial disease, mental illness and many others. These problems force the doctor to adjust the focus of his attention and necessitate changes in the content of courses offered the undergraduate medical student. Nowhere have the changes been more apparent than in the areas of public health and preventive medicine. There is little need to stress that the preventive aspects of clinical medicine never required more emphasis, while the values of restorative methods only begin to be recognized.

"Much of value would accrue to all medical schools in the development of better courses if detailed information were available on existing undergraduate courses in public health and preventive medicine offered in Canadian medical schools. The details should embrace staffing, teaching methods and facilities, timetables, course content, research activities and the integration and relationship with clinical subjects including the extent of combined teaching with clinical departments. Such information would stimulate the medical schools to integrate instruction in these areas into the total educational programme and, thereby, achieve better preparation of the future practitioners of clinical medicine.

"To this end, it was recommended that the Canadian Medical Association undertake a survey and report on undergraduate instruction in Public Health and Preventive Medicine as conducted in the medical schools of Canada."

The above is a resolution passed by the Public Health Committee of the Canadian Medical Association in 1955. This Public Health Committee had a membership representing all ten divisions of the Canadian Medical Association and included public health physicians, general practitioners, hospital administrators, paediatricians, psychiatrists, obstetricians and gynaecologists; the committee supported this resolution unanimously. The resolution has been tabled, since a committee of the Association of Canadian Medical Colleges under Dean Chester Stewart of Dalhousie University has this matter under study. It is felt that Dean Stewart's report should receive close study by the incoming Public Health Committee of the Canadian Medical Association in order to confirm or refute the above resolution. This has been recommended by the

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Public Health Committee of the Canadian Medical Association.*

If one accepts the above resolution and recalls the teaching hours in each university delegated to public health, varying from 56-214 (Table I), the following question comes naturally: Why does the teaching of preventive medicine require review? One wonders whether perhaps some of us are not becoming ivory-tower dwellers and I refer not only to departments of public health in universities, but also to local, municipal, provincial and federal departments of health.

TABLE I.

TEACHING HOURS IN PUBLIC HEALTH IN CANADIAN UNIVERSITIES, 1951 - 52					
University	1st year	2nd year	3rd year	4th year	Total
British Columbia . . .	22	80	48	64	214
Western Ontario . . .	64	16	38	48	166
Montreal	—	25	—	45	70
*Queen's	(3) —	(4) 150	(5) 60	(6) —	210
Toronto	8	32	64	80	184
Ottawa	(2) —	(3) —	(4) 67	(5) 61	128
Dalhousie	32	48	74	—	154
Laval	—	—	28	28	56
Alberta	—	—	112	—	112
Manitoba	17	30	30	35	112
McGill	—	78	72	—	150

Source:—Faculty of Medicine, University of British Columbia.
*Medical courses longer than 4 years.

Each of us is not always *persona grata* with the practising medical profession, and this is to be expected since our different concepts of community health programmes will clash at times. However, even in the cloistered walls of some universities the public health department is looked upon by some of its sister departments with a bit of scepticism. We know that today there has been talk of removing public health as an examination requirement for the L.M.C.C. This matter has occupied the attention of the Medical Council of Canada in recent years, but fortunately for both the medical profession and the people of Canada, the Medical Council has taken no action. There are many other examples of this somewhat invidious situation, and I am sure each of us can recall experiences which emphasize the fact that physicians in public health are not fully accepted nor are their concepts understood by the practising or teaching profession.

The pioneer days of preventive medicine went by many years ago. Preventive medicine has proved its worth, and if weighed against curative medicine would be found more effective and less costly. Often, however, preventive medicine is found to occupy only a small part in medical teaching and appears late in the curriculum at

a time when the student's mind is already monopolized by the clinical and laboratory aspects of disease; at this stage the student, having had no instruction in the social sciences, is lost in a strange country.

It has been said that medical students should come to realize that "Our best clinicians in these days are our most active practitioners of preventive medicine in their day-to-day clinical work. Our best local public health departments today are as much concerned with planning comprehensive medical care for the citizens of their community as with carrying out their traditional six-point public health programme of prevention."²

If this is the type of graduate we require, and I believe it is, it should be quite apparent that ways and means must be found to bring about a closer integration between the teaching of the clinical and preventive aspects of medicine in its broadest sense.

I feel that the Department of Public Health, University of British Columbia, is making some attempt to meet this problem. You will recall that the University of British Columbia leads all Canadian universities in its allotted hours for the teaching of preventive medicine. The staff at the University of British Columbia is made up of one full-time professor and a part-time associate professor, as well as two assistant professors and several lecturers. The professor, associate professor and assistant professors plan policy and programme in regard to the teaching, and the recommendations of this group are discussed with the Faculty. The associate and assistant professors all hold senior positions with large health departments, and the additional lecturers required are drawn from senior specialists in health and welfare departments and voluntary health agencies in the community.

It should be apparent to us all that medical schools in Canada should have a minimum of three full-time medical men in their department of public health, if the challenge previously mentioned is to be met. The professor and head of the department should have had broad training in the field of public health and preventive medicine and, above all, should be a teacher par excellence. The first associate, it is felt, should be primarily trained in public health but with special training in paediatrics, epidemiology or mental hygiene, dependent on the research activities of that particular school. The second associate must be a medical biostatistician, since biostatistics are poorly taught in most medical schools in Canada today and many practitioners are quite unable to interpret even the simplest of statistical procedures.

Of equal importance is the fact that the services of medical biostatisticians are too often not available to the various departments in a faculty of medicine. This lack of service prevents a critical analysis of clinical material being pre-

*General Council of the Canadian Medical Association on June 17, 1955, accepted this recommendation. At this time Dean Chester Stewart on behalf of the Association of Canadian Medical Colleges extended an invitation to the Public Health Committee of the Canadian Medical Association to participate with the Association of the Canadian Medical Colleges in the survey and report on undergraduate instruction in Public Health and Preventive Medicine as conducted in medical schools of Canada.

sented in the medical literature and, moreover, does not allow planned studies or the presentation of accurate findings in the research programmes so vital to a wideawake faculty of medicine. It is quite logical that the services of the medical biostatistician in the department of public health should be available to other departments of the faculty of medicine.

The three full-time personnel members in the department of public health must be research-minded and, moreover, capable of undertaking some research in their own special field. It is ludicrous to think that preventive medicine can be taught properly and adequately by a group of part-time men, who in some instances have not too much interest (except in the honour of a university appointment) and in most instances insufficient time to develop the programme as it must be developed. Part-time men should never be used simply because they are well known or occupy some important position. When used, part-time men must be integrated into the teaching programme and must have assigned to them specific portions of the curriculum; in other words, part-time men should generally be specialists in a field of public health, whether it be administration, local health services, paediatrics, mental hygiene or civil defence.

The development of a satisfactory programme for teaching public health is much more difficult, in my opinion, than development of a programme in the clinical fields, and for this reason three full-time men are needed.

To teach preventive medicine properly it is necessary not only to teach basic public health but also to teach the student about the community and its resources as they relate directly and indirectly to the promotion of health and prevention of disease. This includes the understanding of the role of governmental and voluntary health agencies, social and welfare agencies and legal resources. If the student does not understand all this, he will have no appreciation when he graduates of his role as a physician in relation to comprehensive health services. If this concept of teaching is to be put in practice, it requires a good deal of organization not only in the classroom but, above all, in well planned and supervised field training in the community.

Participation in the oral examination of students for the L.M.C.C. during the past several years makes one a little depressed, as it is too often evident that the recent graduate is not aware of his responsibility in comprehensive medical-care planning. Many students can describe a septic tank to its last dimension, construct a disinfector and even produce line sketches for a pit latrine. Granted, this is important in isolated instances, but to us it is public health teaching at least 20 years old. Do not our teachers of public health realize that in almost every area of Canada today there are sanitary inspectors and public health engineers

whose responsibility it is to give advice on these matters?

It should be emphatically stated that, with the limited time available in some of the universities, public health teaching time would be better spent ensuring that their graduates, who in the main will be clinicians, had a knowledge of public health that was more related to problems of medical-care planning in the community in which they choose to practise.

As an example of the changing emphasis needed in teaching of public health, one wonders if sufficient stress is being put on "life years lost" as a new concept in the teaching of vital statistics, and upon utilization of the data obtained by the Canada Sickness Survey

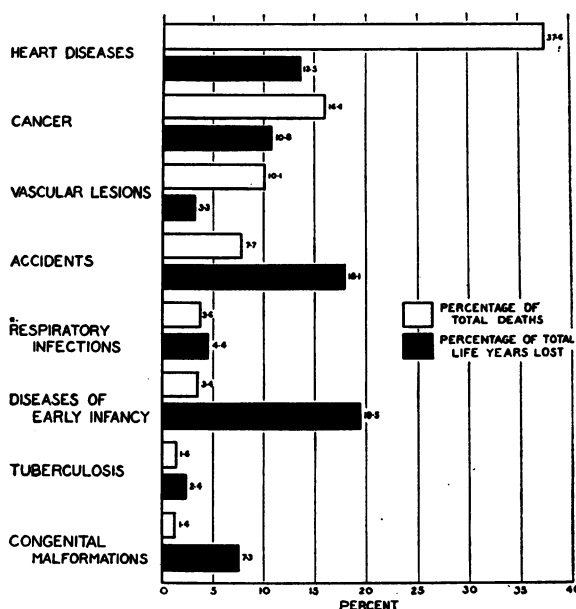


Fig. 1.—Specified causes of mortality as a percentage of total deaths and of total life years lost, British Columbia, 1952 (life years lost under age 70). *Respiratory infections include bronchitis, influenza and pneumonia. (Source: Division of Vital Statistics, British Columbia.)

for the detailed study of morbidity. We know today that cardiovascular disease and malignancy are our leading causes of death, but are we giving sufficient emphasis to those causes of death, such as diseases of early infancy and accidents, which are more important to the economy of Canada and for which perhaps we can develop a more realistic programme? The term "life years lost" was developed by Dickinson and Welker in an article entitled "What is the Leading Cause of Death? Two New Measures",³ and I would highly recommend the introduction of this new concept to all departments of public health in faculties of medicine (Fig. 1).

There are several basic essentials around which a programme for teaching public health should develop. These are as follows:

1. Public health teaching should occupy at least 200 hours in any four-year course. How-

ever, this time should not be asked for unless the teaching programme is worthy of it and the staff and facilities are present.

2. There should be at least three full-time medical men, who should carry up to 85% of the teaching. Part-time men should be used only when they are highly skilled in some field and only when they have a real contribution to make.

3. Relationships should be developed with clinical departments, the medical profession, and government and voluntary health agencies.

(a) *Clinical Departments.*—Many teaching clinicians, though possessing extensive knowledge, are limited in their view of a patient's problems. A typical story on the ward round is this: A child with acute rheumatic fever is seen, there is talk about particular murmurs and their significance, the degree of heart failure present, and the relative merits of treatment, and often it is left at that. All too seldom is inquiry made regarding the siblings, the home situation, the problem in the community, the presence or absence of facilities to care for such a child at home and the other medical-care programmes involved. The student in such a situation becomes lesion-minded rather than socially minded. Many of you will recall similar situations in relation to tuberculosis, poliomyelitis, arthritis and cancer, to mention only a few comparable diseases. This is not the fault of the clinicians, since we too in preventive medicine tend to build walls around what we know best.

Members of a wide-awake teaching department of public health should endeavour to attend ward rounds whenever cases are presented which require comprehensive medical planning, whether it be for the patient or the family, and they should ensure that these problems are brought up for discussion. Teaching departments of preventive medicine must woo and wed the clinical departments and develop rehabilitation thinking for both the patient and the family whenever indicated. As mentioned earlier, this is the responsibility of preventive medicine, since only preventive medicine knows, or should know, where the necessary facilities are in the community to develop such programmes. Clinico-pathological rounds are one of the most successful methods of modern teaching; perhaps the time has arrived for departments of public health to introduce socio-clinico-pathological rounds.

(b) *Medical Profession.*—Teaching departments of preventive medicine can often assist organized medicine in fields such as medical biostatistics, serve on committees dealing with postgraduate training, and offer the advice and guidance of the specialized field of preventive medicine to organized medicine. Teaching departments of preventive medicine should offer these services and not wait to be asked. It is only by such methods and by demonstrating an

eager willingness to assist whenever possible that organized medicine and preventive medicine will work as a team and enter into joint planning for comprehensive medical-care programmes. Public health departments are strategically situated in their opportunities to assist the medical profession and they must take full advantage of this opportunity.

(c) *Government and Voluntary Health Agencies.*—There is no need to elaborate on this last area in the development of relationships. Suffice it to say that preventive medicine cannot be taught in any medical school unless the relationship with government and voluntary health agencies is at the highest possible level.

Not only must the relationship be good, but again teaching departments of preventive medicine should be able to assist government health agencies, particularly in the educational field. Summer internships for senior medical students in local health units should be developed. This is not for recruitment of health officers, but rather serves a dual purpose; firstly, the health unit benefits from having senior medical students attached to it and, secondly, the student himself brings back to his fellow-students basic information regarding the practice of preventive medicine in the field.

An interesting development in the Department of Public Health, Faculty of Medicine, University of British Columbia, is the present planning for a teaching fellowship of a year's duration for health unit directors wishing to take postgraduate training. The cost of this should be borne by the Faculty of Medicine and employing agency equally. It is emphasized that, although this teaching fellowship would be in the Department of Public Health, one-third of the time should be spent in one or more of the clinical departments, dependent on the type of postgraduate training required.

It is emphasized that no department of public health of a faculty of medicine can expect to develop the necessary relationship with the sister clinical department, the medical profession or government and voluntary health agencies and thus draw on all these resources, unless the department itself can make a useful contribution in return. There is a great opportunity here, since with the necessary staff recommended above the department of public health should be both able and anxious to assist the sister clinical department of biostatistics, offer assistance to the medical profession and official government agencies in postgraduate medical education and comprehensive medical-care planning, and conduct surveys of community health problems.

An excellent example of the contribution which can be made by a department in the faculty of medicine is seen in British Columbia. It is quite apparent that few provincial or municipal health departments in Canada can offer a satisfactory consultative service in paediatrics to local health

services or the family physician. In British Columbia the Department of Pædiatrics, Faculty of Medicine, has been officially designated as Consultant in Child Care to the Health Branch, Department of Health and Welfare, Province of British Columbia. This development has been of untold benefit to the people of British Columbia, and most other provinces in Canada would do well to consider a similar appointment.

Finally, one wonders why the department of public health in a Canadian university, or a group of Canadian authorities on public health, have not published a textbook on the subject. There is an urgent need for such a textbook with a Canadian viewpoint, since today the accepted texts are British or American and neither has any concept of the organization or administration of health services across Canada. It is known that in the field of pædiatrics such a textbook is now being prepared by pædiatric authorities across Canada. The need is even greater in the field of public health for such a textbook for the use of the future physicians of Canada.

In conclusion, it appears that many teachers of preventive medicine today are living in ivory towers; contact has been lost with the sister clinical department, the needs of the community in medical-care planning are being neglected and, finally, medical students are being graduated without any concept of their over-all responsibility to the people of Canada.

A few of us, whether we represent teachers or practitioners of public health, have a tendency to believe that our work is self-sufficient. Stuart Chase has described the danger of this type of thinking in these words:

"We will become like soldiers lying in isolated foxholes without means of communication . . . yet the social sciences are concerned with different species of the same critter—man—and the notion that we can abstract the medical, the economic or psychological aspect of his behaviour without regard to the rest is utter nonsense."⁴

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CORRIGENDUM

In the article entitled "Acute Stenosis of the Right Ventricle Following Septal Infarction" by H. J. Dempsey and R. P. Carere, published in the issue of February 1 (74: 212, 1956), lines 9 and 10 of the fifth paragraph of the description of the case (page 212, second column) should read: "and diastolic murmur was now heard in the left fourth and fifth intercostal spaces near the sternum. A few scattered fine moist rales were heard at both lung bases."

Clinical and Laboratory Notes

THE INFLUENCE OF METEOROLOGICAL FACTORS ON CERTAIN BIOLOGICAL EXPERIMENTS*

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THAT METEOROTROPIC FACTORS may influence and alter medical as well as surgical procedures has been stressed since the time of Hippocrates.⁹ The aim of this paper is to illustrate briefly how sudden changes in barometric pressure can affect the outcome of certain biological or pharmacological experiments.

Toxicity studies where tadpoles (larvæ) of different species of frogs have been used are described in the literature,¹ but so far no data are available to show how such experiments are subject to meteorotropic influences. Our example illustrating this point refers to experiments performed with the larvæ of the South African frog *Xenopus laevis* Daudin.

Previously it had been reported that ammonia appears to be one of the main toxic factors in the urine of schizophrenics¹ as measured by the *Xenopus* larvæ test.² The toxicity‡ of urine of schizophrenics and healthy controls could be related to their ammonia content, which we determined independently. It was also found that the toxicity of urine diminishes significantly if the latter is adjusted to pH 7.5 and boiled for a half hour. The concentration range 2.5-5 mg. % of ammonia, administered as ammonium chloride to the larvæ, caused a mortality of 50-100% in 24 hours; this was also the range of concentration in urine which we have found to be toxic.

According to our observations in performing hundreds of toxicity experiments, the death of larvæ in the urine-water milieu always occurs after a time lag. Munro³ has shown that the main nitrogen excretion product of *Xenopus* larvæ is ammonia; hence the metabolism of the larvæ alkalizes the experimental urine-water milieu (we measured in 1,000 c.c. of water with 30 tadpoles 14 days of age, raised and kept at 20° C., pH shifts in 24 hours as high as 1.0 unit, e.g. from pH 7.4 to 8.4), and thus the previously "bound" basic volatile substances of the urine liberated—ammonia being the main component among them—kill the tadpoles.

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‡The sensitivity of the larvæ was measured on each experimental day by exposing them to standard concentrations of aqueous mesaline hydrochloride.